QUALITY OUTDOOR PRESCHOOL ENVIRONMENTS IN EARLY CARE AND EDUCATION CENTERS

By

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Bachelor of Science

University of Central Oklahoma

Edmond, Oklahoma

1997

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirement for
the Degree of
MASTER OF SCIENCE
December, 2005

QUALITY OUTDOOR PRESCHOOL

ENVIRONMENTS IN EARLY

CARE AND EDUCATION

CENTERS

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ACKNOWLEDGEMENTS

This study was to determine how outdoor play spaces were utilized in a midwestern state and to what extent. The focus was on the equipment and teacher planning for the outdoor environment as an indicator of quality. This study was made possible by the funding and groundwork of the Department of Human Services/Division of Child Care and Dr. Deborah Norris; therefore, I would like to thank them for their dedication to the field of Early Care and Education and their accomplishments.

It is with great appreciation that I thank my advisor, Dr. Deborah Norris, for her countless hours of assistance and encouragement. I also thank my committee members, Drs. Mona Lane and Barbara Sorrels for their assistance and time in the completion of my thesis. Without the support of the faculty, this would have been unbearable.

I sincerely thank my co-workers, Gala Garrett, Shelia Lynch, Jamie Rice, Meg Bilyeu, Annette Tipton and Kathy Statham, who show me the importance of teamwork and valuing each person and their gifts. A special thank you goes to Gala and Shelia, for always providing positive encouragement to keep me on track. It is their friendship and support that kept me smiling on stressful days. Also to my friend and co-worker, Dawn Tull, thanks for inspiring me, not only professionally but personally. Thanks to the Division of Child Care for their vision of quality not only for children and child care providers, but also for their staff. I greatly appreciate the opportunity that has been afforded to me and the other staff willing to exceed the status quo.

With great rewards comes great sacrifices, to my family who made the biggest sacrifice, I give them my undying gratitude. I want to extend personal and sincere thanks to:

- My grandparents, Bud and Leona Luschen, for their unending love and support, without it, I would not be who I am. You are my roots from which I have been able to grow and withstand the weather.
- My husband, Kenny Towell, for believing in me and encouraging me to accomplish my dreams. You know me the best and love me anyway, that is why you hold my hand today and will also in heaven.
- My son, JT Yeargain, for being my heart. You have brought me more happiness than I could of ever asked for. I strive to be the best example for you, because I want you to be the best. I believe in the greatness you hold inside.
- My stepchildren, Holly, Kendall, Cody, and Jesse, for sharing their lives with me. Each of you brings me great joy and has unique gifts to share with the world.
- My grandchildren, Noah, Bailey and Hannah, for making my heart smile. Nothing warms the heart like a grandchild and they have been a great balance for me during their uncles' age of adolescence.

Lastly, but certainly not least, I give my thanks to God. I've trusted in him when life hasn't made sense and he has given me strength to live each day and a love for him and others that is unconditional.

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CHAPTER I

INTRODUCTION

The importance of experiences for children in the outdoor environment has been recognized since the 18th century, yet in today's society there is little emphasis on these opportunities as more and more activities are planned for and occur inside. The majority of information available about the physical environment is about indoor settings. Longitudinal and cross sectional research regarding outdoor environments is also limited. This leads some authors (Frost, 1992; McGinnis, 2003; Morris, 1990; Studer, 1998; Taylor & Morris, 1996) to suggest that the outdoor environment is the most ignored and least utilized part of child care programs. Greenman (2003) goes so far as to suggest these outdoor environments are simply "prison exercise yards" (p. 41) for children. "Respecting our history, and knowing the benefits of outdoor experiences, educators may wish to provide young children both richer environments and extended time in them" (Rivkin, 2000, p. 5).

More and more children are spending most of their time in child care; therefore, the importance of the outdoor environment increases, as it may be the only opportunity a child has to experience the outdoor setting. Licensing requirements are the foundation for care in most states but the extent to which the outdoor environment is valued and enforced appears limited. The concern for quality in child care is steadily rising but the focus does not appear to be shifting to the outdoor environment even though it is

considered by many in the field as “an integral and critical part of the early childhood education curriculum” (Taylor & Morris, 1996, p. 157). This means enhancing the outdoor experiences of children becomes a vital role for the teacher.

THE PURPOSE OF THE STUDY

The purpose of this study was to determine how outdoor play spaces were utilized in a midwestern state and to what extent. Currently the enforced playground requirements of the state focus on health and safety issues with only one requirement for specific equipment. Four questions were raised:

1. Are child care facilities meeting the minimum licensing requirements for the available outdoor equipment as set forth by the state?
2. Do child care facilities exceed the minimum licensing requirements in the variety and complexity of the environment?
3. Do preschool teachers utilize the outdoor environment by planning outdoor activities?
4. Is there an association between the educational level of the teaching staff and the variety of outdoor opportunities and or the utilization of planned outdoor activities?

DEFINITIONS

For this study the terms variety and complexity are based on the definitions provided by Kritchevsky, Prescott, and Walling (1969). **Variety** is the “number of different kinds of units (only in terms of differences in activity)” (p. 11). For instance, five shovels in the sand box only stimulates one activity, digging. **Complexity** of equipment is “the extent to which they contain potential for active manipulation and

alteration by children" (p. 10). Specifically defined in three categories, simple, complex and super. Simple being single use items like swings. Complex has two play units such as a sand table with accessories, while super builds on this by adding one or more units for instance sand, water and accessories.

THEORETICAL FRAMEWORK

Quality encompasses an unspoken interdependence with the facets of early care and education. All aspects of the environment, what is available and how it is designed, connect to how children interact with the environment. The tone of the environment is determined by requirements and teachers knowledge of how and why the environment should be established in certain ways. Multiple components are best analyzed by the complex and dynamic systems theory.

Current research practices are to focus on a couple of variables at a time from the field of early care and education, specific pieces such as outdoor play and children's social interaction. When in reality, there are so many variables that affect outdoor play and social interaction, for instance, what is in the environment, how long children are allowed to explore and what type of exploration is allowed in the environment, these factors alone can ultimately affect the outcome due to the complexity of the interactions. This type of involvement can be studied by using chaos theory's six core areas: decomposability, nonlinearity, sensitivity to initial conditions, recursive symmetries, feedback and attractors, though not every component must be met for this system to flow (Buell & Cassidy, 2001). Decomposability is the process of taking into account every aspect of the interdependence features of quality. Nonlinearity holds the idea that change is random and unequal in the relationship to the factors of the system. An element that

may influence later information is considered the sensitivity of the starting conditions. This sensitivity is important as it can factor into the nonlinearity aspect as to why each situation is unique. The recursive symmetries are the guiding form that is repeated in the system. Feedback simply allows for opportunities to gather information from the system for evaluation and reconsideration. Lastly attractors, a point that can always be returned to, this is most often the state requirements as they are usually the foundation of a program's operation (Buell & Cassidy, 2001).

Decomposability, as to child care, is best described with a statement by Shim, Herwig, and Shelley (2001) "the contextual factors [facility, equipment and program structure] are also related to quality of programs, such as physical space, curriculum, caregiver-child interactions, indoor and outdoor play spaces, materials and activities and health and safety" (p. 151). This concept is also supported by the National Association for the Education of Young Children in their position statement, Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8 (1996). State licensing regulations are put into place as a foundation for safety and quality but they are only good if they are being followed and enforced correctly. Understanding them depends on how well trained or informed the staff are. The teacher's knowledge of the outdoor environment must include how, when and why using this area is important, in order to improve quality. The philosophy of a program, their goals for and design of the play area are shaped by adult knowledge and understanding.

Equipment choices and rotating of equipment are examples of nonlinearity. Kritchevsky et al. (1969) claimed that equipment, which looks exciting and constructive to adults, might actually be of no interest to children. Greenman (2003) suggests

boredom as a factor for change and increased variation, as children become disinterested in equipment their behavior or play may move into a less appealing process. On the other hand when groups of children from different backgrounds are offered specific equipment they may not use it in the intended way or may not use it at all and the same is true about the size of the space available (Kritchevsky et al., 1969; McGinnis, 2003).

The element of the different backgrounds of children is an example of how the sensitivity to initial conditions can intertwine with this core area; the outcome from the change may be related to the starting conditions. This also leads to the recursive symmetries in that experience and comfort with certain types of equipment is the guiding factor to the child's play choices. Children may initiate change in the environment, simply by developing; therefore one important aspect of the complex system is to arrange for challenge and variation in complexity. Children will attempt challenge to a point then return to what they know before pushing forward, this recursive symmetry is a typical aspect of child development, but is also an indicator for the feedback mechanisms, as staff and children are able to gauge the range of development from the level of attempted challenge (Frost, Brown, Sutterby & Thornton, 2004; Henniger, 1994). Educators also must be sensitive to the initial conditions in that children may carry out actions with equipment that may not be intended with its design (Naylor, 1985). Kritchevsky et al. (1969) also mention the ability of children to interpret the environment differently from other children based on their experiences. Feedback from their play should be considered, as Studer (1998) points out designing for effectiveness happens over time; blunders and new ideas are part of the complex process, as well as the needs of children changing which will influence the environment.

CHAPTER II

REVIEW OF THE LITERATURE

Reviewing the literature begins with the standards and quality criteria of the outdoor environment, which included licensing requirements, tiered quality strategies, the Consumer Products Safety Commission Handbook on Public Playground Safety, the national accreditation standards, developmentally appropriate practices, and the Environment Rating Scale. With this initial review focusing primarily on safety issues, further examination of the literature was needed to determine what makes up a quality physical environment, which led to specific definitions for variety and complexity, as well as information regarding planned curriculum and the adult role.

STANDARDS AND QUALITY CRITERIA FOR OUTDOOR ENVIRONMENTS

Standards. In the field of Early Care and Education, most states, provide a base line for general or minimal licensing requirements for providing child care. There are four additional options for exceeding these licensing requirements which are tiered quality strategies, the Consumer Products Safety Commission Handbook on Public Playground Safety, national accrediting standards, and/or the Environment Rating Scale (Harms, Clifford, & Cryer, 1998). All five of these resources, as well as developmentally appropriate practices are reviewed for their criteria regarding the outdoor environment.

Licensing Requirements. A review of child care licensing playground regulations across the United States (National Resource Center for Health and Safety in Child Care,

2004) indicated that all state requirements focus mainly on indoor factors. When comparing the state requirements for outdoor play only, 48 had any requirements for this area. Very few specifically identified the type of equipment to be available as the majority called for just developmentally appropriate equipment. Some indicated only an amount needed (plenty or sufficient) while others were specific to activity (climbing, riding, balancing) or area (vigorous or large muscle). Only one state, Oklahoma, was specific regarding type and number of equipment pieces that should be available to include large muscle, as well as music, dramatic play, blocks/loose parts and art. There was also one state, Indiana, which considered the outdoor area as an extension of the learning environment including curricular objectives.

Many states have a requirement for daily outdoor play, weather permitting however, only a few required it for both morning and afternoon, with a handful being specific to the amount of time spent outdoors (15 minutes to 2 hours). A small number of states allow for an indoor space to be used in lieu of the outdoor play area or outdoor playtime.

The preponderance of outdoor requirements focus on safety issues, almost every state had requirements for supervision, square footage, impact, fencing or barriers and hazards with fewer focusing on fall zones, shade, and location. The majority required direct supervision of children at all times in the outdoor environment. Kieff (2001) indicated that supervision is vital to successful outdoor play. Square footage requirements ranged from 30 to 80 square feet per child with the majority falling at 75 square feet. Only a few did not mention it at all or simply stated sufficient square footage.

Impact material was a consideration for the majority of states though almost half were not specific about the amount necessary. Those that were specific had varied amounts ranging from 5-12 inches. Over half of the states require fencing, a natural barrier, or protected play space to separate children from hazards. Those that had fencing requirements indicated the fencing height of 3-4 feet, less than 10 did not mention this area or required it only if hazards exists. Forty-seven states required the outdoor play space be free of hazards of any sort, including items such as mold on impact material, plants, sharp edges, standing water and animals. Fall zones were rarely listed as a requirement or not specific regarding the guidelines, though a few were specific with a range of 4-6 feet around the perimeter of the equipment. About half of the states require some sort of shade with one state, Virginia, indicating that the requirement is only for the months of June, July and August. About half of the states require the outdoor play space be adjacent or adjoining the building or a safe passage to another play space such as rooftops, public playgrounds and parks. A couple of states required the outdoor play space to be on site or directly accessible from the indoor area.

Tiered quality strategies. Over half of the 50 states currently participate in a tiered quality strategy. These systems are to enhance the general or minimal licensing requirements. According to information from the National Child Care Information Center (2004, 2005), tiered quality strategies are a system to improve and convey levels of quality in child care. There are currently six basic or common components used for these quality systems. One of these components looks at the learning environment but only in relation to indoor activities even though the outdoor playground is one of the *13*

quality indicators in licensing regulations (Fiene, 2002). Enhancement of quality still does not address outdoor environments.

Consumer Products Safety Commission Handbook. One-fourth of the states as well as many authors (Frost et al., 2004; Henniger, 1993/94; Henniger, 1994; McGinnis, 2003; Wallach, 1990; Wardle, 1997, 2000) referred to the Consumer Products Safety Commission Handbook on Public Playground Safety as a guide to playground construction and maintenance. This handbook, as an additional source of outdoor standards, focuses solely on safety issues regarding playground equipment, including fall zones, impact material, hazards and design/construction to reduce the number of injuries to children. Frost and Dempsey (1990) stated that proper enforcement from state agencies of the outdoor regulations is key to reducing the vulnerability of children to injuries and facilities to lawsuits.

National Accreditation. A third option for exceeding the state licensing requirements is to receive national accreditation. A comparison of the requirements of two commonly used accrediting agencies, National Association For Education of Young Children (NAEYC, 1998) and National Early Childhood Program Accreditation (NECPA, 1998), show that they too focus primarily on safety issues in regard to the outdoor environment, specifically supervision, impact, fall zones and hazards. NAEYC also provides guidelines for square footage and fencing. They both require daily outdoor play, weather permitting. However NAEYC indicates the focus for outdoor play being "children's need for fresh air and exercise" (p. 25), though they allow to off set limited outdoor space with indoor space such as a gym. NAEYC does call for more specific use of space such as areas for privacy, digging and open space. The chief focus for outdoor

environments for NECPA is safety, including daily documented inspections. NECPA also has more specific safety requirements for all equipment used, such as equipment surface treatment. This information concurs with Frost (1992) indicating there is no national accreditation group for child care that gives more than casual attention to playground safety or design, because the majority of the requirements are for the indoor environment and staff. This wide range of state and national requirements on safety is only part of the reason that Frost (1992) indicates the need for a common set of national standards for adoption by states, professional and public agencies, and manufacturers, in relation to the expansion of playground development and use as an environment for learning.

Developmentally Appropriate Practice. The position statement of the National Association for the Education of Young Children regarding Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8 indicates children should be provided outdoor experiences (NAEYC, 1996). It encourages the design of the environment to protect children (health and safety), offer opportunities for fresh air and a balance of activities to encourage movement throughout the day. As a position on practice it is very limited in looking at the outdoor environment as a place for learning or as an extension of the classroom.

Environment Rating Scale. The final option for establishing outdoor guidelines used by some states as the evaluation piece to determine the level of tiered quality is the Early Childhood Environment Rating Scale Revised Edition (Harms et al., 1998). It is an international tool used to evaluate the environments of early childhood settings, on a seven-point rating. It only rates the outdoor environment on nine of the 43 items. Of the

nine outdoor items four of them focus on health and safety issues (items 7, 8, 14 and 29); two of them (34 and 35) deal with opportunities for outdoor play and the remaining three are concerned with specific equipment, 22-blocks, 23-sand/water, and 24-dramatic play. More specifically item 7 is space for gross motor play covering space available, hazards or safe environment, the accessibility to outdoor area, how it is arranged, the surfaces available, shade and conveniences such as storage and water. There is not specific information about the requirement of space, impact, or fencing. Gross motor equipment is item 8, which focuses on type and condition of equipment, amount available, targeted skills that are age appropriate as well as variety. Item 14 rates safety practices regarding hazards, supervision, maintenance of play equipment as well as safety rules for children. The last safety item is 29 regarding supervision of gross motor activities, this item examines staff supervision and interactions with children, with the excellent score adding concepts regarding language/literacy development, play enhancement and opportunities for positive social interaction. The two items under program structure item 34—schedule and item 35—free play, minimally look at opportunities for outdoor play, by indicating that is offered as part of the daily happenings. The other three items (blocks, sand/water and dramatic play) indicate that having the specific equipment available outdoors is part of the criteria for scoring a 7 (excellent) on each item.

In conclusion it was clear that the current focal point on quality for outdoor environments from these six sources is predominantly safety standards. When minimum licensing requirements are followed and enforced properly, the primary reason for injuries becomes poor maintenance. According to McGinnis (2003) it is important to address the safety needs without sacrificing positive learning opportunities for children.

Currently the view of outdoor quality is the issue of safety, however literature indicates there are other areas of quality for the outdoor environment, which are: variety/complexity, equipment/structure types, loose articles, planning for it as part of the curriculum, factors of use, and the adult role. These areas and their roles in enhancing quality will be reviewed in detail.

VARIETY/COMPLEXITY

Quality physical environments start with the foundation of variety and complexity, as these are the play ability factors. For outdoor environments in the current state of limited equipment these factors are key to improving the value of the outside learning space. Kritchevsky et al. (1969) established the groundwork for variety and complexity, which are still applied by researchers and child care program planners. They use these terms to describe the potential units (empty space) and play units (space with play equipment) of an environment and suggest that both complexity and variety are "of greatest importance when children are expected to play freely for some length of time and to make their own choices about what to play with" (Kritchevsky et al., 1969, p. 12). To determine play space available the units would be added up and divided by the number of children using the space at that time (Shim et al., 2001).

> "It is necessary to understand both the parts of a play space (the contents and the empty space around the contents) and how these parts function as a whole, since it is apparently the total settings which children perceive and to which they respond" (Kritchevsky et al., 1969, p. 9).

Variety. When authors and educators speak of variety they often referred to options available and or the amount of equipment. Kritchevsky et al. (1969) indicated that variety specifically relates to types of activity offered by equipment, for example climbers offer climbing. Therefore options or equipment available have not increased the

play value of an environment if all the equipment elicits the same activity. Wilson (1996) used the example:

> a play yard with four different play units – a jungle gym (climber), a sand table, a dirt area, and a set of swings – offers only three different kinds of things to do. Children can use these play units to climb, dig, or swing. Thus, there are few choices as to what to do (p. 11).

Another important element of variety is the opportunity for children and adults to alter the environment, changing or rearranging the material to keep experiences new (Kritchevsky et al., 1969; Noren-Bjorn, 1982; Wilson, 1996).

Complexity. The second feature or consideration is complexity, defined by Kritchevsky et al. (1969) as the degree whereas play units "contain potential for active manipulation and alteration by children" (p. 10). Three facets characterize it; simple, complex and super. Simple being "a play unit that has one obvious use and does not have sub-parts or a juxtaposition of materials which enable a child to manipulate or improvise" (Kritchevsky et al., 1969, p. 10), for instance a slide. Complex is "a play unit with sub-parts or juxtaposition of two essentially different play materials which enable the child to manipulate or improvise" (Kritchevsky et al., 1969, p. 10), such as sand and accessories. Super as "a complex unit which has one or more additional play materials, i.e., three or more play materials juxtaposed" (Kritchevsky et al., 1969, p. 10), for example sand, water and accessories. Typically adults set up environments with simple units, and it is often the children that extend them into greater units (Kritchevsky et al., 1969).

OUTDOOR EQUIPMENT

The outdoor environment typically consists of equipment/structures that are fixed to the outdoor space. These pieces are the first element to consider when determining the variety and complexity of the environment. The second component of planning for

variety and complexity is loose articles. The idea for these pieces is not necessarily to have more but to look at the activities the equipment offers children.

Equipment/structures. Fixed equipment most commonly found and enjoyed are swings and climbers (Caesar, 2001; Greenman, 2003; Hendy, 2000; Sutterby & Thornton, 2005). Swing options include typical swings (seat and tire) as well as porch swing and hammocks. Children naturally want to climb, so it is best to offer them a safe option (Caesar, 2001). To increase complexity "play structures and equipment should be arranged for integration of play across playscape and between play structures" (Sanoff, 1995, p. 86), linking items such as "ramps, planks, bridges, or barrels to crawl through" (Guddemi & Eriksen, 1992, p. 16). Quality outdoor environments include equipment that provides various levels of difficulty and risk, including heights (Greenman, 2003; Sutterby & Frost, 2002; Trister Dodge, Colker & Heroman, 2002). Safety factors required by licensing requirements should influence this environment, but other safety factors that enhance quality are maximum height limits (Wardle, 1997) and "break away points" (Greenman, 2003, p. 76) where children can stop or change course until ready to move to the next level. Also all children at any level should be able to access the equipment (Hendy, 2000). Other options for fixed equipment could be slides, brachiation, as well as platforms for jumping and balancing (Greenman, 2003; Sutterby & Thronton, 2005). "The inclusion of healthy risk-taking opportunities is an important ingredient for quality outdoor play" (Henniger, 1994, p. 10), but "fixed, heavy duty, manufactured playground equipment is only one important component of developmentally sound play environments" (Frost et al., 2004, p. 44)

Loose Articles. The concept of loose articles was originally started by the European adventure playgrounds where simple junk items such as old tires, cable spools, sand, bricks, rope and lumber were available for endless creative construction (Greenman, 2003; Henniger, 1993/94; Wardle, 1997). This exact model is not used in the United States, however the theory can be to improve the quality of the outdoor environment for child care facilities (Frost, Bowers, & Wortham, 1990; Henniger, 1993/94; Wardle, 1997). "Loose parts are dynamic and ever-changing to meet the changing needs of children during play" (Guddemi & Eriksen, 1992, p. 16). Frost (1992) stated that "loose materials are the major content of preschoolers play" (p. 8), however, loose articles currently found in outdoor environments are often limited to sand (as impact material), balls, and tricycles. Adding loose materials to the outdoor environment does not need to be expensive or elaborate. Simply utilizing the outdoor space as a classroom by applying the same principles of the indoor environment, either by bringing items from inside to the outside or by creating interest areas outdoors to enrich the learning environment (DeBord, Hestenes, Moore, Cosco, & McGinnis, 2002; Pfouts & Schultz, 2003; Studer, 1998; Trister Dodge et al., 2002; Widler, 2001). There are many recommendations for approaches to expanding the loose articles outside to improve the quality of the environment and "the number of children in the yard will influence how many centers you decide to provide. The more children in the yard, the greater choice of activities" (Studer, 1998, p. 13).

EXTENSION IDEAS FOR OUTDOOR PLAY

The five most often mentioned areas for expansion in the outdoor environment were dramatic play, natural/science, sensory including sand/water, art, and

reading/writing (Davies, 1996; Eaton & Shepherd, 1998; Esbensen, 1999; Frost et al., 2004; Greenman, 2003; Guddemi & Eriksen, 1992; Henniger, 1993/94; Henniger, 1994; Pfouts & Schultz, 2003; Studer, 1998; Sutterby & Frost, 2002; Trister Dodge et al., 2002; Widler, 2001). Dramatic play items included prop boxes or play crates, which were usually focused on play themes. These props could also be expanded with other items such as playhouses, dress-up clothes, boxes, rugs and puppets. Wheeled toys were also mentioned in connection with this area, by designing tracks around the dramatic play location (Frost & Dempsey, 1990) or enhancing with "signs, chalk, road markers, directional arrows and big orange cones" (Trister Dodge et al., 2002, p. 498). Suggestions for the natural or science area included, using as much of the natural environment as possible (trees, birds, insects, etc) and enhancing with discover equipment, such as magnifying glasses, binoculars, and jars for catching insects as well as books about nature (birds, animals, weather and vegetation). Another possible plan was the use of a garden, either by planting in part of the play yard or in containers. Specific areas for sand play was mentioned more often then water or sensory play. However, this area included a wide range of possibilities such as flour, soap, salt, dirt, and water, adding items like sieves, scoops, plants, dinosaurs and tubs to use for manipulating the material. Art takes on new meaning in the outdoor environment where messiness is not a concern. Children are able to use indoor art supplies in a greater sense as different textures and ideas inspire their creativity and design. Reading and writing materials extend children's play and learning, by allowing them to document observations, make signs or other items for dramatic play activities, also enjoying books about nature or other current interest.

Guddemi and Eriksen (1992) mentioned loose articles for woodworking, math and block play. Studer (1998) advised that manipulatives, such as puzzles, vehicles, and animals were an important additive and Trister Dodge et al. (2002) suggested music and movement accessories. A unique recommendation was cooking, using an open-pit, which was part of the European adventure playground (Sutterby & Frost, 2002). Adding any of these loose articles can enhance children's play in ways that might not occur in the limits of the indoor environment.

PLANNED CURRICULUM

The "outdoor environment is an essential and important component of the early childhood curriculum, providing opportunities for child-initiated play that are complementary to, yet different from the experiences available in the indoor environment" (Davies, 1996, p. 41). To ensure the utilization of the outdoor environment it should be part of the curriculum, by establishing goals and creative written plans (Widler, 2001) including the interests of children (Studer, 1998) and avoiding limited time frames. Flexibility should be a daily consideration as Trister Dodge et al. (2002) states "the outdoors provides emergent curriculum because you never know what might be awaiting you when you are tuned into nature" (p. 519).

Quality child care includes providing children the opportunity for outdoor play daily both in the morning and afternoon, even if for a brief period of time (Frost 1992; Harms et al., 1998). In relation to the amount of time spent outdoors, Frost (1992) reports that the Scandinavians allow for two hours of outdoor play daily, which concurs with Trister Dodge et al.'s (2002) recommendation, though they suggest an hour in both the morning and afternoon, extending the time when the weather permits. Fjørtoft (2001)

discussed programs designed exclusively as outdoor classrooms where children spent every day learning outside. For children to fully create and experience the outdoor environment they need an appropriate amount of time outside daily, minimally thirty minutes. The main factors affecting the use of the outdoor environment are weather (Greenman, 2003; Naylor, 1985; Trister Dodge et al., 2002), limited by extreme temperatures and severe circumstances, and careful planning to take full advantage of optimal weather conditions; time, (Naylor, 1985), often limited by teachers, who themselves are uncomfortable, frustrated or bored. As well as child and adult preferences, (Frost & Wortham, 1988; Guddemi & Ericksen, 1992; Henniger, 1993/94; McGinnis, 2003; Naylor, 1985), such that with their limited view of outdoor environments, adults often see it as a gross motor experience only and children become bored with the limited equipment and space.

ADULTS AND OUTDOOR PLAY

What is currently found on playgrounds is adults grouped together in one area of the play yard or sitting together on a bench, visiting, while observing children with no or limited interaction with them unless for discipline or safety purposes, often handled by calling out to children across the play yard, instead of going to the child (Davies, 1997; Taylor & Morris, 1996; Treme, 1992). This practice comes from teacher beliefs that children develop without involvement, structure or guidelines from teachers, that outside time is for teachers to relax and visit while children are physical and loud, basically to run free (Davies, 1996; Davies, 1997; Frost, 1992; Taylor & Morris, 1996). This deficiency in teacher involvement leaves missed teachable moments and creates situations of limited supervision (DeBord et al., 2002; Trister Dodge et al., 2002).

Teachers seeing themselves solely in the role of safety managers and overseeing barren outdoor environments lead Davies (1996) to find that "teachers do not perceive the full educational potential of the outdoor environment" (p. 43). This is also supported by Shim et al. (2001) who found teachers did not view the outdoor area as an extension of the classroom so they "did not actively provide, or plan for, an enriched responsive outdoor play environment" (p. 159). Treme (1992) saw these beliefs as true of even "qualified and certified teachers" (p. 13). These practices and beliefs may have stemmed from the significant emphasis on the indoor environment including requirements, tiered quality strategies, literature and textbooks, as well as the lack of confidence of teachers and the limited training towards understanding the value of outdoor play or simply the lack of support for staff from other educators, parents and policy makers that push for academic achievement. It is this break down in the system that "many teachers, parents, and policymakers underestimate both the immediate benefits of recess as a partner to quality instruction, and the cumulative and deferred benefits of play for children's learning and development" (Kieff, 2001, p. 319).

Supervision is a key function of adults in the outdoor environment, they must be able to see children at all times and intervene if necessary for behavioral or safety reasons. However staff receives little or no training in appropriate outdoor topics, such as supervision and safety (Frost & Jacobs 1995; Taylor & Morris, 1996). Kieff (2001) states:

> Teachers or paraprofessionals may need special training to supervise playground activities effectively. Parents, community members, senior citizens, or high school or college students can serve as playground volunteers, not to supervise but to teach and engage children in games, help children resolve conflicts, and help them organize their own play (p. 320).

Research shows that in order to increase outdoor quality everyone involved with outdoor happenings of children should obtain annual training in topics related to the total outside experience, including how and when to guide children, how children play, observing children to better understand their play and interests, physical fitness, safety and supervision, as well as how to equip the outdoor environment for learning (Frost, 1992; Frost et al., 2004; Frost & Dempsey, 1990; Treme, 1992).

"Teachers need to commit to becoming actively involved in facilitating creative play experiences outdoors" (Henniger, 1994, p. 14). This calls for them to be exploration role models, observant of children's interest, encouraging of different play experiences and levels of challenge. "For teachers, this means getting their sneakers on and interacting and moving with children" (Sutterby & Frost, 2002, p. 39). Meaning the "adults follow the lead of the children" (p. 33) without being over bearing (DeBord et al., 2002).

Teachers are clearly able to establish appropriate lesson plans for indoor activities, therefore they "should plan for the outdoor environment in substantially the same way they plan for the classroom, including the use of learning centers" (Frost & Dempsey, 1990, p. 58); this idea of planning for it and viewing the enrichment of the outdoor environment as part of the curriculum is also supported by DeBord et al. (2002), Henniger (1994), Taylor and Morris (1996), and Trister Dodge et al. (2002). "If the teachers spend time on a weekly basis preparing materials and activities for indoor play, similar commitments are needed for the play ground" (p. 13) stated Henniger (1994), but he went on to say "teachers must commit greater amounts of time, energy, and resources

to the outdoor setting if it is to effectively complement the learning and growth currently taking place indoors" (p. 14).

Well-designed and equipped playgrounds encompassing children's interests and active participation from teachers' (planning and interactions with children) decreased discipline problems and the number of outdoor injuries (Frost & Dempsey, 1990; Studer, 1992; Treme, 1992). Well-planned play zones also "allow teachers to see and be seen with ease" (Kritchevsky et al., 1969, p. 17). To keep children interested it is important for centers to rotate or rearrange equipment to allow children new and different play options. Staff should work together to analyze and create or enhance the outdoor learning environments for children. "Teachers and caregivers frequently express surprise at the behavioral changes in children resulting from redesigning their playgrounds" (Frost, 1992, p. 10).

CHAPTER III

METHODOLOGY

SAMPLE

The sample was 292 randomly selected licensed child care centers representing the range of quality care in a midwestern state. Almost two-thirds (61.4%) were for profit, which represents the distribution of the state. Information was gathered from one preschool classroom and teacher at each site. On average the teachers had been in the field of early childhood for over 8 years with the range from less than one year to 35 years. Employment at their current location ranged from less than one year to 23 years with an average of two years. Of the 292 teaching staff, the majority (79.1%) had specialized teacher education with a median of 12 college credits without a degree or Certificate of Mastery. Table 1 represents the sample distribution of both general education and specialized education.

Table 1

Educational Level of Teachers

Education Levels	N	%
General Education	**(n=260)**	
Less than High School	2	.8
High School/GED	54	20.8
Vocational School	36	13.8
Some College	99	38.1
Associates Degree	23	8.8

Table 1 continued

Education Levels	n	%
Bachelors Degree	42	16.2
Graduate Degree	4	1.5
Specialized Education	**n= 236**	
None	73	30.9
Less than 12 hours	53	22.5
12 hrs or more but no degree completed	63	26.7
Associates Degree	17	7.2
Bachelors Degree	25	10.6
Graduate Degree	5	2.1

PROCEDURE

Observations were conducted at each site for 3-4 hours by an observer. This occurred in one preschool classroom and included all the typical daily happenings for the specified time frame of the observation. The observer recorded types of equipment available and rated the outdoor environment regardless of whether or not children were observed in the outdoor environment. The observer then provided the preschool teacher with questionnaires regarding their demographics as well as an Instructional Activities Survey regarding her/his reported classroom practices.

MEASURES

The outdoor environment was assessed using the Outdoor Learning Environment checklist (Appendix A). This checklist inventories outdoor equipment observed which were marked by checking the equipment available and then checking the amount of variety based on the nature of activity the equipment provides. There was also a section

to indicate the total number of play materials available per complexity type based on complexity as defined by Kritchevsky et al. (1969), which are simple, complex and super.

To be in compliance with licensing requirements the facility has two options, for the purpose of this study they will be referred to as Option A and Option B. For Option A facilities must have a minimum of one item from five of the following seven equipment categories: climbing apparatus; swinging apparatus; crawl-through apparatus; wheeled or riding toys; balance apparatus; balls, bean bags, and Frisbees; sand and water play with accessories. Option B allows in lieu of any one of the required five items the facility may have two items from musical equipment, dramatic play and dress up, blocks or loose parts; and/or outdoor arts and crafts as long as the items are designated for outdoor use only. These variables were measured with a "yes" or "no" answer, with "yes" indicating compliance. For the purpose of measurement the "yes" answers were given a numerical value of one and "no" equaled zero. Compliance was determined by adding up the number of items available.

Based on the review of the literature, nine types of variety have been identified and were examined. Table 2 indicates the variables of variety (types of activity equipment offers) and examples of equipment that offer that specific skill. These were scored with a "yes" or "no" answer, with "yes" indicating it is offered. Each "yes" to activity type was assigned a score of 1, that were summed for a total variety score, therefore the total possible score range per facility was 1 to 9.

One item was selected from the Instructional Activities Survey to examine the utilization of planned outdoor activities. Teachers were asked to indicate on a scale from 1 to 5 "*how often they provided specifically planned outdoor activities*." The scale for

the question was 1–almost never (less than monthly), 2—rarely (monthly), 3—sometimes (weekly), 4—regularly (2-4 times a week), and 5—very often (daily).

TABLE 2

VARIETY—ACTIVITIES/SKILLS

SKILLS/AREAS	**EQUIPMENT**
CLIMBING	Climbing, Jungle gyms, Bars (brachiation), Slides, Barrels
SWINGING/ROCKING	Swings (seat, tire, porch, hammock), Spring/rocking horse
LARGE MUSCLE (Building/construction, jumping, dancing, balancing)	Loose parts (balls, barrels, bean bags, hoops, parachutes, ramps), Music/Movement Large blocks, Balance beam
MULTIPURPOSE PLAY STUCTURES	
RIDING	Wheel toys (tricycles, riding toys, wagons), Ramps
SENSORY, INCLUDING SAND/WATER	Digging area, Sand/water table, water play, Loose parts (tools), Art (finger painting)
PRETEND	Dramatic play structure / props, House play
FINE MOTOR/SKILLS	Math/Manipulatives, Blocks, Books/Writing, Art (Crayoning, painting), Woodworking
SCIENCE/NATURE	Garden, Loose parts (bubbles, magnifying glasses, binoculars etc)

CHAPTER IV

RESULTS

The first research question examined compliance of child care facilities with licensing requirements for outdoor equipment. Child care facilities have two options to demonstrate compliance with the licensing requirements. The first option, which for the purpose of this study will be referred to as "*Option A*", is to have at least one item from a minimum of five or more "typical" equipment items (1-7), which are climbing, swinging, crawl-through, wheeled/riding toys, balancing, sand/water, and loose pieces such as balls, beanbags, and Frisbees. Table 3 illustrates the frequency of equipment and Table 4 shows the compliance record based on the number of equipment pieces available.

Table 3

Option A-Outdoor Compliance

Requirement	n	%
Climbing	280	95.9
Swings	164	56.2
Crawl-through	0	0
Wheeled/riding toys	206	70.5
Balance beam	1	.3
Sand and water	190	65.3
Balls,beanbags,Frisbee	162	55.7

Table 4

Option A-Amount available

# of items	n	%
1	15	5.2
2	47	16.2
3	83	28.5
4	89	30.6
5	56	19.2
6	1	.3
7	0	0

The second option referred here after as "*Option B*" allows the requirement to be maintained by meeting Option A with only four items and replacing the 5th item by adding at least two or more of the following which are designated for outdoor use only: music, dramatic play, blocks/loose parts, and arts/crafts. Table 5 and Table 6 represent the frequency and compliance record, respectively.

Table 5

Option B-Outdoor Compliance

Requirement	N	%
Music	5	1.7
Dramatic Play	207	71.1
Blocks/Loose Parts	165	56.5
Arts and Crafts	18	6.2

Table 6

Option B-Amount available

# of items	n	%
0	47	16.2
1	107	36.8
2	124	42.6
3	12	4.1
4	1	.3

The analyses for this research question regarding child care facilities meeting the minimum licensing requirements revealed that 35% of the 292 facilities were meeting the minimum requirements, 19.2% using Option A and 15.5% met the licensing requirements with Option B. Even though Table 6 reflects that almost 50% had two or more of the other loose equipment items with Option B, they must have four or more of the required items from Option A to be in compliance, which is reflected in Table 7. The number of items in Option A ranged from 1-7 with a mean of 3.44 (sd=1.13), while fifteen had only one item available. The mean for the four items (range 0-4) in Option B was 1.36

(sd=.81), with the most common equipment items being dramatic play and blocks/loose parts.

Table 7

Breakdown of compliance options

	n	%
5 or more—option A	57	19.5
4 or more—option A and 2 or more of option B	45	15.5
Only 4--option A	44	15.1
Only 3--option A	83	28.5
Only 2--option A	47	16.1
Only 1—option A	15	5.2

Research question two examined the variety and complexity of the environment based on Kritchevsky et al. (1969) definitions. As for variety the nine areas assessed ranged from 1 to 9) and showed that on average a facility had 5.26 activities available with a standard deviation of 1.49. Fourteen percent had limited variety options with three or less. The two items that showed up on less than 10% of playgrounds were fine motor and science/nature activities, which included items such as books, art supplies, manipulatives, and science props (binoculars, magnifying glasses, etc). The most commonly offered activity was climbing, available on 95.9% of the 292 play yards. The second most common area was large muscle activities (80.4%), which included a multitude of skills, such as jumping, dancing, balancing and throwing. Followed by the multipurpose structures, another large muscle activity that includes multiple skills. The

variety findings for activity types have been illustrated in Table 8. The frequency range for the variety items have been shown in Table 9.

Table 8

Variety—Activity Types

Activity	N	%
Climbing	280	95.9
Swinging/Rocking	167	57.2
Large Muscle	234	80.4
Multipurpose structure	211	72.3
Riding/wheel toys	206	70.5
Sensory (sand/water)	190	65.3
Pretend/dramatic play	207	71.1
Fine motor/skills	27	9.3
Science/nature	12	4.1

Table 9

Variety--Frequency Range

Range	n	%
1	1	.3
2	7	2.4
3	33	11.3
4	48	16.5
5	66	22.7
6	73	25.1
7	49	16.8
8	12	4.1
9	2	.7

The complexity of the environment revealed that the more multifaceted the equipment the fewer available. The number of simple units to measure complexity varied from 0-71 items, 75% had 24 or fewer items accessible, the mean was 18.34 with a standard deviation of 12.77. There were 0-11 complex units available with the mean of 1.32 (sd=1.71), whereas 38% of all facilities had zero. The range of super units was 0-4 with 43% offering none, creating a mean of .69 (sd=.71).

The third research question addressed the issue of teacher planning of outdoor activities. Of the 292 surveys requesting self reported information from teachers

regarding their planning for outdoor activities, 251 were returned. The rating for this tool was scored 1 for "*almost never*", 2 "*rarely*", 3 "*sometimes*", 4 "*regularly*", and 5 "*very often*". The mean for this research question was 3.44 (sd=1.04), indicating that sometimes teachers plan for outdoor activities, as presented in Table 10.

Table 10

Planning for outdoor activities

Frequency answers	N	%
Almost never	8	3.2
Rarely	35	13.9
Sometimes	90	35.9
Regularly	74	29.5
Very often	44	17.5

The final research question regarding the connection between the teacher education level and the variety of outdoor opportunities (possible range of 1-9) and or the utilization of planned outdoor activities (with the possible range of 1-5) revealed modest but were significant correlations. The analyses showed (Table 11) that there was a correlation between the specialized teacher education and the total number of variety opportunities as well as the planned outdoor activities score; revealing the higher the specialized education the greater the possibility for variety and planned outdoor activities.

Table 11

Education and activity correlation

	General Education	Specialized Education
Total Variety Score	.10	.14*
Utilization of planned activities	.10	.15*

*p<.05

CHAPTER V

DISCUSSION

This study reviewed the quality of the outdoor environment by looking at the equipment required by licensing regulations, the variety and complexity of the environment as well as the planned experiences and teacher education. It revealed that less than half of the facilities met the licensing regulations. Since the requirements are the foundation for care it seems to support the concern that the outdoor environment is not valued (Frost, 1992; McGinnis, 2003; Morris, 1990; Studer, 1998; Taylor & Morris, 1996). The limited use of the outdoor environment restricts children's ability to development large muscle skills. According to Strickland (2001), children develop skills through practice, by restricting children's opportunities to run and jump freely in the outdoor environment contributes to the increasing problem of childhood obesity and illness. While Hendy (2000) indicates development of large muscle skills aid in the abilities necessary for academic success such as with reading.

Another concern is the enforcement to ensure compliance with the licensing regulations, especially since this study was from the only state that requires specific equipment. Seventy-five percent of the facilities were not meeting the minimum mandatory state licensing requirements, this stimulates further concern regarding other outdoor requirements, such as impact materials and fall zones, being followed or monitored appropriately. This large number of non compliant facilities seems to support the theory that the outdoor area is under valued.

The variety scores were 50% or higher in 7 out of the 9 activity types, five of which focus strongly on large muscle development, including two that had multiple gross motor skills. Hendy (2000) reports that these large muscle/gross motor activities allow children to develop their reading skills, though Guddemi and Eriksen (1992) state that this focus for outdoor play is simply limited. This study found the most common fixed equipment to be climbers, which is supported by Caesar (2001), Greenman (2003), Hendy (2000), Sutterby and Thornton (2005). The two most recommended areas to incorporate into the outdoor environment were dramatic play (Eaton & Shepherd, 1998; Guddemi & Eriksen, 1992; Henniger, 1993/94; Henniger, 1994; Studer, 1998; Trister Dodge et al., 2002) and science/nature (Esbensen, 1999; Greenman, 2003; Pfouts & Schultz, 2003; Studer, 1998; Sutterby & Frost, 2002; Trister Dodge et al., 2002; Widler, 2001), this study found one of these to be the most commonly found loose article, dramatic play. Ironically, science was the least; this was sadly surprising since the outdoor environment in itself is a science/nature concept.

The complexity of the environment revealed that the most common play units were simple (as many as 71), which agrees with Kritchevsky, et al. (1969) statement that adults typically set up the environment with simple play units. This also coincides with the idea that variety is seen as more items instead of different opportunities, as programs would have multiple play units such as riding toys, shovels, balls, etc. Though these items alone do not increase the complexity of the environment, Kritchevsky et al. (1969) believes children will use these simple units to expand the complexity of their play. Kritchevsky et al.'s (1969) theory is supported by other authors who believe children should participate in the planning and designing of the environment, since they are the

individuals utilizing the space for their education (Davies, 1996; Eaton & Shepherd, 1998; Greenman, 2003; Guddemi & Eriksen, 1992; Noren-Bjorn, 1982; Pfouts & Schultz, 2003).

To encourage and increase the variety and complexity of the environment, facilities may need to seek alternatives. Funding is often seen as a hurdle to providing a quality outdoor environment, however there are many alternatives, such as homemade equipment and seeking the support of parents and other community members. Another notion of quality outdoor environments is for them to contain storage in the proximity of activities this is strongly supported by many researchers (Caesar, 2001; Frost, 1992; Guddemi & Eriksen, 1992; Henniger, 1993/94; Henniger, 1994; Kritchevsky, et al., 1969; Rivkin, 2000; Studer, 1998; Trister Dodge, et al., 2002; Wardle, 2000; Widler, 2001). This allows for convenient use and protection of equipment as well as another possible play unit.

Shim et al. (2001) and Treme (1992) found that teachers, even educated teachers, did not prepare for the outdoor environment. While other authors suggested outside time was used for teachers to relax and children to move about freely (Davies, 1997; Taylor & Morris, 1996; Treme, 1992). However, the majority of teachers from this study stated they sometimes, if not more often, plan for outdoor activities. Furthermore, it showed a slight connection between teacher training and the possibility of increased variety and planned activities. Much of the literature gathered prior to this analysis points to the limited availability of educational information and the lack of support for the outdoor environment, which causes some speculation to this study's findings. In thinking about the theory that supported this study, complex and dynamic systems theory, conceivably

this finding could be due to the increased knowledge of child development and developmentally appropriate practices, not directly to the increased knowledge or understanding of the importance of the outdoor environment as an extension of the classroom. Given that research attest for the outdoor environment to truly be utilized teachers must incorporate it into the daily curriculum, including goals and children's interest (Studer, 1998, Trister Dodge et al., 2002; Widler, 2001).

IMPLICATIONS

This study reveals weaknesses in the child care system, in regard to facilities meeting minimum licensing requirements and the state licensing agency monitoring for compliance. As the regulations are based on health and safety guidelines as well as developmentally appropriate practices, failing to follow and enforce these minimum requirements automatically lowers the quality of the environment. Therefore, it is vital to recognize this weakness and rectify it before enhancement of quality can occur.

The answers provided by preschool teachers indicating the infrequency of planned outdoor activities imply there is a flaw in the education and training of staff to understand the educational potential of the outside environment. Teachers should plan for and view the outdoor area as an extension of the classroom (DeBord et al., 2002; Frost, 1992; Frost & Dempsey, 1990; Studer, 1998; Trister Dodge et al., 2002). Research from Greenman (2003), Guddemi and Eriksen (1992), and Studer (1998) goes even further suggesting that to increase the quality of the outdoor environment there should be a trained play leader who is specifically responsible for the outdoor environment. These individuals plan the outdoor environment including themes to correspond with the indoor education. They

also interact with children to stimulate their thinking and they manage the environment to increase safety.

Davies (1996) "suggest that the full potential of outdoor environments for children's development is not always well understood by some teachers, not is it a priority in their curriculum" (p. 45). This study supports that idea, especially in the area of science, considering the outdoor environment is a plethora of science. Professional development is necessary for child care educators as well as state enforcement agencies. Based on the lack of compliance there clearly is a need for training regarding compliance with requirements, including enforcement. Both educators and enforcers need training on how to plan for the outdoor environment and what type of activities to plan, as well as the reason for and the value of large motor skill development. Treme's 1992 research showed a strong connection to high quality outdoor large muscle development to active planning and teacher participation, which was established after evaluating the program and training teachers. It would also be helpful to have training for staff in equipment selection and development. Lastly but equally important is the need for training in outdoor supervision as outside time is not break time, the supervision of outdoor play is as essential as indoor if not more so.

LIMITATIONS

There were some limitations to this study. One was that the outdoor environments were observed regardless of children being present. Therefore it is possible that some of the facilities seen as not meeting requirements could provide necessary equipment in the environment only when children are present. Although research suggests to ensure utilization of equipment and increasing play value and quality of the

environment storage should be available in the outdoor environment (Caesar, 2001; Frost, 1992; Guddemi & Eriksen, 1992; Henniger, 1993/94; Henniger, 1994; Kritchevsky, et al., 1969; Rivkin, 2000; Studer, 1998; Trister Dodge et al., 2002; Wardle, 2000). Another limitation is the observations were merely a "snap shot" in time, and might not represent the typical daily environment, nor was this a longitudinal study to verify information over time. Additionally, equipment considered large multipurpose play structures, could contain items necessary for compliance such as crawl-through or balancing, but may have been considered as a climbing apparatus only, a further breakdown of these structures could lead to a different finding in the areas of compliance and variety. Lastly, since the survey information was self-report from teaching staff their responses could be from the increased knowledge of what is developmentally acceptable and not what is actually practiced. Their answers could also vary if there had been a more defined explanation of what was considered planned activities. As this question was simply "*did they plan activities*", the variance of their responses could have been anything from playing a game to setting up interest areas with specific outcomes such as science concepts like plant or animal life.

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APPENDIX A

Outdoor Learning Environment

Check all that apply.

Availability of Equipment and Materials

_____ Climbing apparatus sized to the age of children in care
_____ Swinging apparatus
_____ Crawl-through apparatus
_____ Wheeled or riding toys
_____ Balance apparatus
_____ Balls, bean bags, and Frisbees
_____ Sand and water play with accessories

_____ Music equipment
_____ Dramatic play and dress up
_____ Blocks or loose parts
_____ Outdoor arts and crafts

Other:
_____

Variety (activities/skills) available

_____ Climbing
_____ Swinging/Rocking
_____ Large muscle getting inside, building, jumping, balancing, dancing
_____ Multipurpose play structure
_____ Riding
_____ Sensory, including sand/water
_____ Pretend
_____ Fine motor/skills
_____ Science/Nature

Complexity of Play Materials (Indicate number of each type of structures)

_____ Simple units (How many? _____)
_____ Complex units (How many? _____)
_____ Super units (How many? _____)

VITA

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Title of Study: QUALITY OUTDOOR PRESCHOOL ENVIRONMENTS IN EARLY CARE AND EDUCATION CENTERS

Pages in Study: 41 Candidate for the Degree of Master of Science

Major Field: Family Relations and Child Development: Early Childhood Education

Scope and Method of Study: The purpose of this study was to determine how outdoor play spaces were utilized in a midwestern state and to what extent. Participants in the study were 292 randomly selected licensed child care centers representing the range of quality in the state. One preschool classroom and teacher from each center participated in the study. Classrooms and outdoor environments were observed and teachers completed a survey of demographic information and practices. Checklist were used to measure compliance and outdoor opportunities.

Findings and Conclusions: The study found less than half of the facilities met minimum licensing requirements. There was an average of five different opportunities available for children, though the complexity of the environment consisted of simple play units. Results also indicated that teachers sometimes plan for outdoor activities. There was modest but significant correlations between teacher specialized education and the total number of variety opportunities and planned outdoor activities.

Advisor's Approval: Dr. Deborah Norris